

Both statements are false

The two types of **ultrasonic** units are **magnetostrictive** and **piezoelectric**. In both types, alternating electrical current generates oscillations in materials in the handpiece that cause the scaler tip to vibrate. Depending on the manufacturer, these ultrasonic vibrations at the tip of the instruments of both types range from 20,000 to 45,000 cycles per second. In **magnetostrictive** units the pattern of vibration of the tip is **elliptic**, which means that all sides of the tip are active and will work when adapted to the tooth. In **piezoelectric** units the pattern of vibration of the tip is **linear**, or back and forth, meaning that the two sides of the tip are the most active.

Sonic units consist of a handpiece that attaches to a compressed-air line and uses a variety of specially designed tips. Vibrations at the sonic tip range from 2000 to 6500 cps, which provides less power for calculus removal than ultrasonic units.

Ultrasonic and sonic tips are designed to operate in a wet field with a water spray directed at the end of the tip. Within the water droplets of this spray mist are tiny vacuum bubbles that quickly collapse, releasing energy in a process known as **cavitation**. The cavitating water spray serves to flush calculus, plaque, and debris dislodged by the vibrating tip from the pocket. Magnetostrictive ultrasonic tips generate heat and require this water for cooling. Sonic and piezoelectric units do not generate this heat but still utilize water for cooling frictional heat and flushing away debris.

Dental Endoscope: this device consists of a reusable fiberoptic endoscope over which is fitted a disposable sterile sheath. It fits onto periodontal probes and ultrasonic instruments that have been designed to accept it. This device allows clear visualization deeply into subgingival pockets and furcations. It permits operators to detect the presence and location of subgingival deposits.

EVA system (*enhanced visual assessment*): this system uses motor-driven diamond files to correct overhanging or overcontoured proximal alloy or resin restorations.

Prophy-Jet air-powder polishing device: was the first specially designed handpiece to deliver an air-powered slurry of warm water and sodium bicarbonate for polishing. It is very effective for the removal of extrinsic stains and soft deposits. **Note:** Polishing powders containing aluminum trihydroxide or other substances rather than sodium bicarbonate are being used to offset the abrasive effect of sodium bicarbonate on restorations as well as dentin and cementum. **Contraindications** to the use of air-powered polishing devices are those patients with respiratory illnesses, hemodialysis, hypertension and infectious diseases.